Massage arm

The invention relates to a massage arm with a massage element for a massage unit that can be mounted in a massage chair or another item of furniture used for sitting or lying, where a first and a second shaft are comprised, where the massage arm displays a holding arm, connected in articulated fashion to the first shaft, on the free end of which the massage element is located in articulated fashion, and a projecting arm, connected in articulated fashion to the second shaft, one end of which acts on the holding arm, where the shafts can be moved in the massage unit by means of a drive in order to produce a first vibrating movement in a first frequency range, and where the massage element displays at least one contact surface acting on the body of the person to be massaged.

Various embodiments of massage arms of this kind are known. The massage unit customarily consists of a massage carriage, which can be incorporated into the backrest of a massage chair, or into another item of furniture to be equipped with a massage unit, and can be moved back and forth along a frame by means of a drive. As a rule, the massage carriage displays two motor-driven shafts, via which oscillation of two massage arms, each provided with a massage element, is generated. To this end, each massage arm consists of a holding arm, connected in articulated fashion to the one shaft, on the free end of which the massage element is located, and a projecting arm, connected in articulated fashion to the second shaft, one end of which acts on the holding arm. To generate the oscillation, the ends of both shafts display eccentric areas, on which the holding arm and the projecting arm are mounted. In this context, the eccentric areas at the ends of the shaft connected to the

holding arm can be angled relative to this shaft, such that, when this shaft rotates, the holding arms bearing the massage elements perform a pivoting movement about an essentially horizontal axis extending through the intersection of the shaft in question and the angled axis of the eccentric areas. The massaging action generated by this movement of the massage elements is referred to as "kneading".

The movement of the shaft connected to the projecting arm is such that, when superimposed on the eccentric oscillation of the shaft connected to the holding arms, essentially vertical movement of the massage elements is generated via the projecting arms, possibly with a component oriented perpendicular to the frame. The massaging action exerted by this movement is also referred to as "tapping".

The "kneading" and "tapping" movements are superimposed on each other to produce a first vibrating movement of the holding arm in a first frequency range, said vibrating movement being transmitted to the massage element.

Massage arms each with one massage element of the kind mentioned in the opening paragraph are known, for example, from WO 97/37627, EP-A-1 013 254 and EP-A-0 998 894. The techniques of kneading and tapping described above are intended to more or less simulate manual massaging by a masseur.

DE 34 29 392 A1 describes a muscle-relaxing device, where the backrest displays a pair of rollers, which can be moved up and down along the backrest, and a vibration unit that has an eccentric weight on its shaft, where the eccentric weight is power-driven, such that the backrest is given an undulating movement, where the rollers and the vibration unit are supported or mounted on a supporting part that engages a threaded rod that can be rotated reversibly by means of an electric motor.

The object of the present invention is to further improve the massage effect exerted by a massage arm with a massage element on the body of the person to be massaged in the conventional techniques.

According to the invention, the object is solved in that, on a massage arm with a massage element of the kind mentioned in the opening paragraph, a vibration device is located on the massage element or the holding arm for generating a second vibrating movement, superimposed on the first vibrating movement, in a second frequency range that is higher than the first.

The result of the measure according to the invention is that, during the superimposed "kneading" and "tapping" movement, a relaxing, cramp-relieving action is exerted on the muscles of the person to be massaged, such that the massage effect is thereby improved.

Although vibration devices in massage carriages are known from US-A-5 020 518 and US-A-5 462 516, document US-A-5 020 518 only discloses a massage arm that can be set in oscillating motion by a single shaft and via which a "kneading" movement is exerted on the back of a person sitting in a chair, in the backrest of which the massage carriage is located in longitudinally movable fashion. Furthermore, located on the mounting plate of the massage carriage is a vibration device that transmits a vibrating movement to the entire massage carriage. Since the massage elements are connected to the supporting plate of the massage carriage by several parts connected to each other in articulated fashion, this vibrating movement is hardly transmitted effectively to the massage elements. In contrast, document US-A-5 462 516 discloses not only massage elements designed as rollers on a shaft, but also further massage elements designed as rollers that are located in articulated fashion on the ends of arms mounted in non-

rotating fashion on a second shaft, and exert a "kneading" movement on the back of the person to be massaged. Moreover, provided on the mounting plate of the massage carriage is a vibration device which, as according to US-A-5 020 518, exerts vibration on the entire massage carriage.

Open to consideration as vibration devices that act directly on the massage arm and/or the massage element are, for example, electric motors with small dimensions, the drive shaft of which is provided with an unbalance. It is also possible to use coils with metal cores or armatures, which can be set into vibrating motion by means of alternating voltage.

In a development of the invention, the second frequency range, generated by the vibration device, is between 15 and 100 Hz. The second frequency range is preferably between 20 and 70 Hz. In a particularly preferred practical example, the second frequency range is between 20 and 40 Hz.

The vibration device is expediently located in the vicinity of the contact surface of the massage element.

The massage elements open to consideration for the invention can display at least one massage body, the surface of which forms the surface in contact with the person to be massaged. In this context, the vibration device is preferably located next to the massage body, or in the massage body.

In an advantageous embodiment of the invention, the vibration device displays an electric motor, the drive shaft of which is provided with an unbalance.

Practical examples of the present invention are described in more detail below on the basis of the drawing. The drawing shows the following:

Fig. 1 A side view of a massage arm with a massage element, where a vibration device inserted in a dome-shaped massage body is exposed,

Claims

1. Massage arm (1) with a massage element (2) for a massage unit that can be mounted in a massage chair or another item of furniture used for sitting or lying, where a first and a second shaft are comprised, where the massage arm (1) displays a holding arm (4), connected in articulated fashion to a first shaft, on the free end of which the massage element (2) is located in articulated fashion, and a projecting arm, connectable in articulated fashion to a second shaft, one end of which acts on the holding arm (4), where the shafts can be moved in the massage unit by means of a drive in order to produce a first vibrating movement in a first frequency range, and where the massage element (2) displays at least one contact surface acting on the body of the person to be massaged, characterized in that a vibration device (8) is located on the massage element (2) or the holding arm (4) for generating a second vibrating movement, superimposed on the first vibrating movement, in a second frequency range that is higher than the first.

2. Massage arm (1) according to Claim 1, characterized in that the second frequency range is between 15 and 100 Hz.

3. Massage arm (1) according to Claim 2, characterized in that the second frequency range is between 20 and 70 Hz.

4. Massage arm (1) according to Claim 2, characterized in that the second frequency range is between 20 and 40 Hz.

5. Massage arm (1) according to one of Claims 1 to 4, characterized in that the vibration device (8) is located in the vicinity of the contact surface of the massage element (2).

6. Massage arm (1) according to Claim 5, where the massage element (2) displays at least one massage body (7) with a contact surface acting on the body of the person to be massaged, characterized in that the vibration device (8) is located next to the massage body (7).

7. Massage arm (1) according to Claim 5, where the massage element (2) displays at least one massage body (7) with a contact surface acting on the body of the person to be massaged, characterized in that the vibration device (8) is inserted in the massage body (7).

8. Massage arm (1) according to one of Claims 1 to 7, characterized in that the vibration device (8) displays an electric motor (9), the drive shaft of which is provided with an unbalance (10).

9. Massage arm (1) according to one of Claims 1 to 8, characterized in that the articulated connection between the massage arm (1) and the massage element (2) displays a ball-and-socket joint.

10. Massage arm (1) according to one of Claims 1 to 8, characterized in that the articulated connection between the massage arm (1) and the massage element (2) comprises pivoting axes (18, 19) arranged crosswise.